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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/973,431

10/09/2001

Liyu Yang

SAR 14083

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7590

12/05/2003

INTELLECTUAL PROPERTY DOCKET ADMINISTRATOR  
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NEWARK, NJ 07102

EXAMINER

ASSAF, FAYEZ G

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/973,431

Applicant(s)

YANG, LIYOU

Examiner

Fayez G. Assaf

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 . 6) ☐ Other: \_\_\_\_\_

Art Unit: 2872

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election of group I: claims 1-17 and 19-20 in Paper No. 6 is acknowledged.

Claim 18 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

***Claim Objections***

Claim 8 is objected to because of the following informalities:

Claim 8, line 1, the phrase "the optical packet header" lacks antecedent basis. The claim has been interpreted as being dependent from claim 7.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2872

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (US 5329601) in view of Glass et al. (US 4,703,996).

Regarding claims 1, 2 and 4-6, Nakamura discloses an integrated optical switch, comprising, an optical directional coupler including a first semiconductor waveguide (6 to 8 of Fig. 1) and a second semiconductor waveguide (5 to 7 of Fig. 1), wherein selected voltage differentials across the first and second waveguides correspond to selected switch states (claim 1). Nakamura does not teach an optical detector comprising amorphous semiconductor material integral to the optical directional coupler and operable to select at least one of the voltage differentials.

However, Glass teaches such an optical detector (see the Abstract).

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to utilize the detector as being taught by Glass for the purpose of

Art Unit: 2872

achieving fast switching response (line 3 to line 4 of the Abstract).

Regarding claim 3, the combination discloses the amorphous semiconductor materials being amorphous silicon alloys (line 38 to 39 of Col. 4).

Regarding claim 7, the combination discloses the optical detector reading an optical pack header (i.e. any optical data information).

Regarding claim 9, the combination discloses the claimed invention except for the detector including an intrinsic layer having amorphous germanium.

However, the use of a preferred material does not serve as basis for patentability.

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to utilize such a semiconductor material because the optical and electrical properties of said material are well understood. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 8 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the optical header information controlling the selected switch states as set forth in the claimed combination.

Claims 10-16 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the second PIN diode being responsive to a biasing voltage, wherein the biasing voltage corresponding to the address information as set forth in the claimed combination.

Claim 17 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the a-Ge intrinsic layer on the second p-type a-Si:H layer as set forth in the claimed combination.

Claims 19 and 20 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest biasing the second PIN diode according to the address as set forth in the claimed combination.

### **Conclusion**

Art Unit: 2872

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (703) 306-5526. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Fayez G. Assaf  
Examiner  
Art Unit 2872



FA  
12/1/03